STAR MICROWAVE

The Wireless Infrastructure Experts

SM Cirius AO - 300/600 Mbps

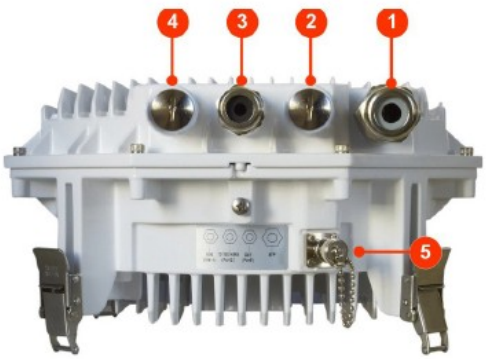
All-Outdoor Point-to-Point Microwave IP Radio

Low-Cost Microwave Transmission Solution

The SM Cirius AO is an advanced microwave radio intended for cost efficient and powerful point-to-point transmission.

Physical Interfaces

- 1. GbE optical (SFP) for traffic and in-band management connection.
- 2. GbE electrical (RJ-45) for traffic, in-band management and PoE connection.
- 3. Fast Ethernet (RJ-45) for out-band management and PoE connection.
- 4. RJ-45 receptacle for Cirius AO units interconnection (1+1 / 2+0).
- 5. BNC receptacle for measurement of RSSI level.



Product Features

- Flexible Operational Modes
- Adaptive Coding & Modulation (ACM)
- Throughput up to 600 Mbps
- 1+0, 1+1, 2+0
- Secure File Transfer Protocol
- Radio Resource Control (RRC)
- Statistical Multiplexing (SM)
- Radio Link Aggregation (RLA)
- Ring Configuration
- Simple Network Management Protocol
- Advanced Ethernet QoS features
- - QoS per VLAN / CoS - DSCP

Applications

- Enterprise and Rural Backhaul
- Microcellular Backhaul
- Video Surveillance

Technical Specifications

GENERAL	
Supply Voltage from	-40 V to -60 V (-48 V typ.)
Supply In-Rush Current	ETS 300 132-2
Command/Control Functions	Transmitter Power,Transmitter Carrier Frequency, Transmitter Mute,Receiver Carrier Frequency,Modulation Mode,Channel Bandwidth
ACM Capability	Adaptive Modulation available as a selectable mode of operation. Refer to General Requirements (3.0) for available modes
Monitored/Reported Functions	Transmitter Power,Transmitter Mute, Synthesizer (loss-of-lock) Alarms,Receive Signal Strength Indication (RSSI), Internal Temperature
NMS Protocols	SNMPv2,SNMPv3,SSH,Telnet,TFTP
Antenna Alignment Connector	BNC
PAYLOAD PORT	
System Interfaces	1 x GbE electrical (RJ-45) interface for traffic, inband management and PoE 1 x GbE optical (SFP) interface for traffic and inband management 1 x Fast Ethernet (RJ-45) interface for outband management and PoE 1 x RSSI (BNC) interface 1 x system interconnection (RJ-45) interface (1+1 / 2+0)
Data Throughput	See Modes of Operation & Radio Data Throughput Table. Actual Payload throughput depends on packet size.
QoS Performance Features	VLAN tagging per 802.1q Priority queuing per 802.1p (VLAN or DiffServ priority bytes) Flow control per 802.3x
Standard Frame Size	64 to 1518 bytes
Jumbo Frame Size (software configurable)	up to 9600 Bytes
Latency (dependent on packet size and traffic mix)	150µs typ. [64 byte packet] 300µs typ. [1518 byte packet]
NETWORK MANAGEMENT PORT	
Interface Connection	GbE with POE [RJ45]
INSTALLATION/MAINTENANCE PORT	
Interface Connection	RS232 [RJ45]
Data Rate	38.4 Kbps max.
MECHANICAL	
Weight	5.6 kg [12.3 lbs]
WARRANTY	
	2 Years

Technical Specifications

Appendix - Transmitter Radio Performance

Transmitter Technical Specifications					
Frequency band (GHz)		**6U/6L**	**11**	**18**	**23**
Maximum Tx Power (dBm)	4QAM	29.5	27.5	26.0	25.0
	16QAM	29.5	27.5	25.0	24.5
	32QAM	28.0	26.0	23.0	23.0
	64QAM	26.0	23.5	20.5	20.5
	128QAM	25.0	22.0	19.0	19.0
	256QAM	23.5	20.5	17.5	17.5
Minimum Tx Power		0 dBm			
Tx Power Increment		1 dB			
Tx Power Accuracy		± 2 dB			

Appendix - Receiver Radio Performance

FCC SYSTEM - Receiver Sensitivity (dBm)						
Capacity	**BW**	**Mod**	**6U/6L**	**11**	**18**	**23**
	10 MHz	4QAM				
		16QAM				
35.8		32QAM	-79.5	-80.0	-80.0	-79.5
44.9		64QAM	-76.5	-77.0	-77.0	-76.5
52.9		128QAM	-73.0	-73.5	-73.5	-73.0
		256QAM				
	20 MHz	4QAM				
		16QAM				
74.1		32QAM			-78.5	-78.0
92.4		64QAM			-75.5	-75.0
108.9		128QAM			-72.5	-72.0
125.5		256QAM			-69.5	-69.0
44.5	30 MHz	4QAM				-87.0
89.0		16QAM				-80.0
111.3		32QAM	-76.0	-76.5	-76.5	-76.0
138.7		64QAM	-73.5	-74.0	-74.0	-73.5
163.5		128QAM	-70.0	-70.5	-70.5	-70.0
188.3		256QAM	-67.0	-67.5	-67.5	-67.0
	40 MHz	4QAM				
118.8		16QAM		-79.0	-79.0	-78.5
148.4		32QAM		-75.5	-75.5	-75.0
185.0		64QAM		-72.5	-72.5	-72.0
218.1		128QAM		-69.5	-69.5	-69.0
251.2		256QAM		-66.5	-66.5	-66.0
	50 MHz	4QAM				
148.5		16QAM			-78.0	-77.5
185.6		32QAM			-74.5	-74.0
231.3		64QAM			-71.5	-71.0
272.6		128QAM			-68.5	-68.0
314.0		256QAM			-65.5	-65.0